

Amendments to the Specification:

Page 1, after the title please insert the following paragraph:

Benefit of the International Filing Dated of September 26, 2003 of PCT/EP2003/010735
and benefit of the September 27, 2002 filing date of DE 102 45 300.4, both by the same
inventors and both entitled “Coating Method and Coated Element” are claimed.

Please replace the paragraph on page 1, lines 20-31, and continued on page 2, line 1, with the following paragraph:

In ~~DE 195 22 371 195 22 372~~ it is proposed for the applying of a diamond layer to a hard metal substrate a first Co-selective etching step with subsequent cleaning of the etched substrate surface and then a WC-selective etching step with subsequent cleaning. To the hard metal substrate pre-treated in this manner is applied a diamond layer by means of a CVD process.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended). Element having

[[[-]]] a substrate (10) of a hard metal or cermet comprising hard material particles (20) and binding material (22)

[[[-]]] and a diamond layer (30);

[[[-]]] wherein the diamond layer (30) is disposed over a first region (24) of intact substrate material within which hard material particles (20) are surrounded by binding material, (22)

[[[-]]] wherein the transition region of the first region (24), which is disposed towards the diamond layer (30), comprises a depth profile having indents (18) and elevations, (16)

[[[-]]] and wherein the diamond layer (30) is braced with the substrate material (10) such that portions (32) of the diamond layer (30) are disposed deeper in the substrate (10) than elevations (16) of the first region (24)[[.]]]

characterised in that:

[[[-]]] between the first region (24) and the diamond layer (30) there is disposed a porous zone (26) in which hard material particles (20) are free of binding material (22) and

[[[-]]] wherein the hard material particles (20) form an intact hard material particle structure within the porous zone and are not weakened at the grain edges by etching.

Claim 2. (Currently Amended) Element according to Claim 1 wherein [[-]] the porous zone (26) comprises an average thickness of 3-7 μ m.

Claim 3. (Currently Amended) Element according to ~~one of the preceding claims~~ Claim 1 wherein [[-]] the porous zone (26) comprises an average thickness d, [[- and]] the depth profile of the transition region of the first region (24) comprises an average peak-to-valley height Rz and a maximum peak-to-valley height Rmax and [[-]] wherein d is less than or equal to Rmax [[-]] and preferably d is less than or equal to Rz.

Claim 4. (Currently Amended) Element according to ~~one of the preceding claims~~ Claim 1 wherein [[-]] the substrate material contains WC hard material particles (20) and a binder (22) containing Co, and [[-]] wherein the grain size of the hard material particles (20) is less than 0.8 μ m and preferably less than 0.5 μ m.

Claim 5. (Currently Amended) Element according to ~~one of the preceding claims~~ Claim 1 wherein [[-]] the binding material (22) contains 3 to 12% and preferably more than 6% and particularly preferably 8 to 10% cobalt.

Claim 6. (Currently Amended) Element according to ~~one of the preceding claims~~ Claim 1 wherein [[-]] the transition region of the first region (24) comprises an average peak-to-valley height Rz of 1 to 20 μm , preferably 2 to 10 μm and particularly preferably 3 to 7 μm .

Claim 7. (Currently Amended) Element according to ~~one of the preceding claims~~ Claim 1 wherein [[-]] the average peak-to-valley height Rz of the transition region of the first region (24) is greater than the grain size of the hard metal, preferably more than five times the grain size of the hard metal.

Claim 8. (Currently Amended) Method for coating a substrate material (10) with a diamond layer (30) wherein the substrate material contains hard material particles (20) and binding material (22) wherein

[[-]] a binding material-selective etching is executed in a first step, wherein the binding material in a border edge zone (12) of the substrate (10) the binding material is removed,

[[-]] a hard material-selective etching is executed in a second step, wherein the hard material particles in the border zone (12) hard material particles (20) are completely removed so that a surface profile with elevations (16) and indents (18) is created,

[[-]] a binding material-selective etching is executed in a third step, wherein a binding material concentration on the surface is removed,

[[-]] and the substrate (10) is coated with a diamond layer (30) thereafter.

Claim 9. (Original) Method according to Claim 8 wherein [[-]] the etching executed in the third step comprises a lesser etching depth than the etching executed in the first step.

Claim 10. (Currently Amended) Method according to Claim 8 or 9 wherein [[-]] in the second step the etching is executed with one of the following chemicals: compounds of potassium permanganate and caustic soda, compounds of potassium ferricyanide and caustic soda, caustic soda, caustic potash solution and/or sodium carbonate,

Claim 11. (Currently Amended) Method according to ~~one of the claims 8 to 10~~ Claim 8 wherein [[-]] in the third step the etching is executed as electrochemical etching with sulphuric acid and/or hydrochloric acid [[-]] or as chemical etching with HCl/H₂O₂ or H₂SO₄/H₂O₂.

Claim 12. (Currently Amended) Method for coating a substrate material (10) with a diamond layer (30) wherein the substrate material (10) comprises hard material particles (20) and surrounding binding material (22) wherein

[-] in a first step a selective etching of the binding material (22) is executed,

[-] hard material particles (20) are removed in a subsequent mechanical removal step by means of a blasting process with blasting particles,

[-] and the substrate (10) is afterwards coated with a diamond layer (30).

Claim 13. (Original) Method according to Claim 12 wherein [-] a binding material-selective etching step is executed after the mechanical removal step.

Claim 14. (Currently Amended) Method according to Claim 12 or 13 wherein [-] a cleaning step is executed before the coating.

Claim 15. (Currently Amended) Method according to ~~one of the claims 12-14~~ Claim 12 wherein [-] the blasting particles consist of SiC and comprise a grain size of less than 100 µm.

Claim 16. (Currently Amended) Method according to ~~one of the claims 8 to 15~~ Claim 8 wherein [-] in the first step an average etching depth of 1 to 20 µm, preferably 2 to 10 µm and particularly preferably 3 to 7 µm is achieved.

Claim 17. (Currently Amended) Method according to ~~one of the claims 8 to 16~~ Claim 8 wherein [-] in the first step the etching is executed with one of the following chemicals: HCl, HNO₃, compounds of H₂SO₄ and H₂O₂, compounds of HCl and H₂O₂.

Claim 18. (Currently Amended) Method according to ~~one of the claims 8 to 17~~ Claim 8 wherein [-] the diamond layer (30) is applied by means of CVD.

Claim 19. (New) Method according to Claim 12 wherein in the first step an average etching depth of 1 to 20 µm, preferably 2 to 10 µm and particularly preferably 3 to 7 µm is achieved.

Claim 20. (New) Method according to Claim 12 wherein in the first step the etching is executed with one of the following chemicals: HCl, HNO₃, compounds of H₂SO₄ and H₂O₂, compounds of HCl and H₂O₂.

Claim 21. (New) Method according to Claim 12 wherein the diamond layer is applied by means of CVD.